

SOUTH DAKOTA

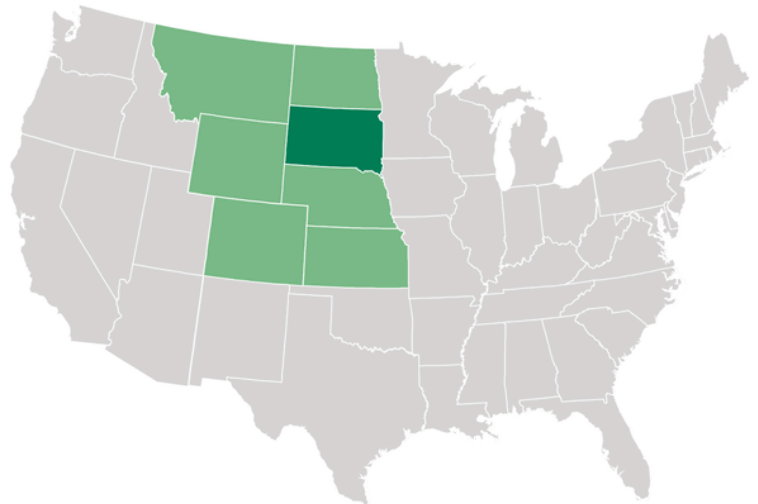


NORTH CENTRAL
Climate Adaptation
Science Center

North Central CASC Consortium Institutions

Host: University of Colorado Boulder

- Colorado State University
- Great Plains Tribal Water Alliance
- South Dakota State University
- The Nature Conservancy
- University of Montana
- University of Wyoming



Key Science Topics



Fish & Wildlife



Grasslands & Plains



Freshwater



Drought



Science Tools
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Our Work in South Dakota

42+
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CASC Network



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Project Highlights



NORTH CENTRAL
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Climate-Driven Shifts in Prairie Pothole Wetlands

Stretching across the northern Great Plains, the Prairie Pothole Region contains wetlands that provide critical breeding habitat for 50-80% of North America's waterfowl. This ecosystem is sensitive to changes in temperature and precipitation, and studies have indicated that climate change could restrict waterfowl habitat, potentially requiring costly wetland restoration efforts.

WHAT: The North Central CASC worked with land managers from the USFWS to answer two key questions—how will precipitation and temperature in the region change over time, and how will the number and location of wetlands change?

RESULTS: Results show that average temperatures will likely increase throughout the Prairie Pothole Region, while precipitation could either increase or decrease. If a wetter future scenario pans out, the change in wetlands would be negligible. If a dry future scenario unfolds, wetlands could be reduced by 25%.

IMPACT: This project resulted in new, more robust predictions of future wetland habitat status in the Prairie Pothole Region, information which can directly inform climate adaptation planning for waterfowl habitat.



Informing Climate Change Adaptation in the Northern Great Plains

Badlands National Park is an iconic site, renowned for its rugged landscape, rich deposits of mammal fossils, and native grasslands that provide critical habitat for wildlife and forage for livestock. Today, changing climate conditions are threatening the park's rich ecosystems and paleontological sites. While we know that changes are occurring, we're less certain about what conditions will look like in 10, 50, or 100 years.

WHAT: The North Central CASC worked with managers at Badlands National Park to identify a range of possible climate futures – known as climate change scenarios – that may unfold in the region, and how resources might be affected.

RESULTS: Four different potential climate scenarios were identified – including more frequent heavy rains or drier conditions – together with management actions that could be taken to protect resources under each scenario.

IMPACT: Managers at Badlands National Park can use the results of these climate scenarios to evaluate whether current management plans will be sufficient to protect the park's resources under different possible futures, and to identify additional or alternative actions that may need to be taken.